L 41266-65

ACCESSION NR: AP5007175

SUBMITTED: 02Mar64 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

Card 2/2 mel

L 32997-65 EPF(c)/EPR/EWP(j)/EWT(m) Pc-4/Pr-4/Pt-4 JAJ/RM/WW
ACCESSION NR: AP5007418 S/0286/65/000/004/0059/0059

AUTHOR: Grishko, N. I.; Mal'tseva, R. P.; Gitis, S. S.; Kutsenko, A. I.; Kutepova, A. I.; Komissarova, G. I.; Shtekker, O. A.

TITLE: A method for producing plasticizers for polyvinylchloride. Class 39, No. 168424

31
B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 59

TOPIC TAGS: polyvinylchloride, plasticizer

ABSTRACT: This Author's Certificate introduces a method for producing plasticizers for polyvinylchloride. The plasticizers are based on aromatic carboxylic acids and monohydric aliphatic alcohols. A wider selection of raw materials is provided by using the products of oxidation of an industrial blend of xylenes which is poor in n-xylene. The Author's Certificate also covers a modification of this method in which an industrial blend of xylenes is used which is poor in o- and n-xylenes.

ASSOCIATION: none

Card 1/2

L 6376-66 EWT(m)/EWP(j) RM

ACC NR: AP5026767 SOURCE CODE: UR/0286/65/000/017/0048/0049

AUTHOR: Fedchenko, V. S.; Kutsenko, A. I.

ORG: none

TITLE: A method of producing dyes for plastics. Class 22, No. 174300

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 48-49

TOPIC TAGS: dye chemical, primary aromatic amine, organic azo compound, plastic industry

ABSTRACT: This Author's Certificate introduces a method of producing dyes for plastics by combining diazotized aromatic amines with an azo component. Di- and trialkylaryl phosphates are used as azo components to produce dyes with plasticizing properties, simplify the process of adding the dye and improve the dye quality.

UDC: 668.811.1 : 667.621.72

SUB CODE: GC,OC,MT/ SUBM DATE: 02Apr62/ ORIG REF: 000/ OTH REF: 000

Card 1/1

Kutsenko, A. K.

F-6

USSR /Microbiology. Medical and Veterinary Microbiology.

Abs Jour: Referat. Zh.-Biol., No. 9, 1957, 35760

Author : Kutsenko, A.K.

Title : Concerning the Fungicidal Action of Some Remedies for Dermatophytes

Orig Pub: V sb.: Eksperim. i klinich. issledovaniia, II, L, Medgiz, 1956, 72-73

Abstract: Epidermophyton K.-W., E.rubrum, Trichophyton gypseum and Microsporon lanosum were sown on liquid wort, in which the materials being tested were placed. The concentrate of green oil (produced for the control of fruit pests), urotropin, and chloramine had the strongest fungicidal and fungistatic action. The green oil retarded the growth of dermatophytes in breeding 1:800-1:1600;

Card 1/2

USSR /Microbiology. Medical and Veterinary Microbiology. F-6

Abs Jour: Referat. Zh.-Biol., No. 9, 1957, 35760

urotropin, 1:1280; chloramine, 1:1600. Atebrin acted weaker (1:200). Tar oil acted very weakly (1:41:16) and radioactive iodine did not act at all. The least sensitive was T. gypseum.

Card 2/2

[redacted], sanitarnyy vrach; SUSLIKVA, A.A., sanitarnyy [redacted],
[redacted]ENKO, A.E., sanitarnyy vrach

Prevention of epidermophytosis in bath houses and swimming pools.
[redacted]. i san. 22 no.4:71-73 Ap '57. (MLRA 10:9)

1. Iz sanitarno-epidemiologicheskoy stantsii Zhdanovskogo rayona
[redacted]
(SWIMMING POOLS
ringworm control (Rus))
(PUBLIC HEALTH,
bath houses, prev. of ringworm (Rus))
(RINGWORM, prevention and control,
in bath houses & swimming pools (Rus))

KUTSENKO, A.K., kand.med.nauk, podpolkovnik meditsinskoy sluzhby

A simple method for the microscopic examination of skin scales and nails. Voen.-med.zhur. no.7:65-66 Jl '59. (MIRA 12:11)
(RINGWORM diag)
(FOOT dis)

GORBOVITSKIY, S.Ye., prof.; KUTSENKO, A.K., kand.med.nauk

"Candida infections; pathogens, clinical picture and epidemiology" by [prof.] P.N. Kashkin. Reviewed by S.E. Gorbovitskii, A.K. Kutsenko. Vest.derm. i ven. 33 no.5:90-91 S-O '59. (MIRA 13:2)
(MONILIASIS) (KASHKIN, P.N.)

KUTSENKO, A.K.

Epidermophytosis caused by Epidermophyton purpureum simulating deep trichophytosis. Vest.derm. i ven. 34 no.11:33-36 N '60. (MIRA 13:12)

1. Iz kafedry kozhnykh i venericheskikh bolezney (nachal'nik - chlen-korrespondent AMN SSSR prof.S.T.Pavlov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(RINGWORM diag.)

KUTSENKO, Aleksey Kirillovich; RYBKEVICH, V.S., red.; LEBEDEVA, G.T., tekhn. red.

[Prevention of fungous diseases] Preduprezhdenie gribkovykh zabolevanii (epidermofitii). Leningrad, Medgiz, 1963. 30 p. (MIRA 16:12)
(MYCOSIS--PREVENTION)

PASHCHENKO, I.V.; KUTSENKO, A.M.

A plexiglass pump. Tsvet. met. 38 no.6:81 Je '65.
(MIRA 18:10)

22(1) SOV/3-59-3-33/48

AUTHOR: Kortnev, A.V., Candidate of Technical Sciences, Docent; Gayuk, G.N., Candidate of Technical Sciences; Kutsenko, A.N.

TITLE: This Was Done in a Vuz (Eto sdelano v vuze) - Stands for Taking the Characteristics of Electron Tubes (Stendy dlya snyatiya kharakteristik elektronnykh lamp)

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 3, pp 65-68 (USSR)

ABSTRACT: The examination of electron tubes as part of the practical work in physics usually causes many methodological difficulties and requires bulky equipment. Workers of the Chair of Physics of the Odessa Polytechnical Institute have therefore worked out a new method of carrying out this training work. Two small stands were made: one for examining diode and triode tubes, the other for tetrodes and pentodes. They contain the following 4 devices: a large scale milliammeter permitting to measure the anode current from

Card 1/4

This Was Done in a Vuz - Stands for Taking the Characteristics of Electron Tubes

0 to 30 ma over 3 diapasons - 3, 9 and 30 ma; a high-resistance voltmeter for measuring voltage from 30 to 300 volt; a large-scale voltmeter (Vc) for measuring grid voltage from -6 to plus 6 volts, from -9 to plus 9 volts and from -18 to plus 18 volts; and a voltmeter for measuring filament voltage. Every device has clamps or sockets for circuit connection. On a horizontal panel are fixed: filament voltage and grid voltage regulators and a switch allowing to lead-in the load resistances into the anode circuit, clamps and sockets for switching on the devices and current sources, and 2 small lamp panels. Here is also a circuit diagram under plexiglass. The connection of the devices on the stand is carried out by wires with single-pin plugs. It is convenient to use a zero point potentiometer. With switch P_1, the load resistances R_1, R_2, R_3, R_4 can

This Was Done in a Vuz - Stands for Taking the Characteristics of Electron Tubes

be connected to the anode circuit of the tube, thereby taking the tube's dynamic characteristics. At the second stand tetrodes and pentodes are examined. This work is practically a continuation of the study of diodes and triodes. Besides the devices mounted on the first stand, there are on this stand a milliammeter for measuring the current on the screen grid, and a high-resistance voltmeter for measuring the voltage on the screen grid with a measurement range from 30 to 200 volts. On the horizontal panel are fixed: a grid voltage regulator, clamps and sockets for connecting the devices and current sources, sockets for the connectors P_1, P_2, P_3, P_4, P_5, and 3 small tube panels. At this stand high-frequency pentodes of the 6Zhi and 6K3 type, and small-button pentodes of the 6Zh3P type can be examined,

This Was Done in a Vuz - Stands for Taking the Characteristics of Electron Tubes

and not only the static characteristics can be taken, but alos the influence of the anode or cathode load on their characteristics can be studied. Rectifiers serve as current sources for the anode circuits and the circuits of the screen grid. The stands were made in the workshop of the institute's Chair of Physics. There are 2 photographs and 2 diagrams.

ASSOCIATION: Odesskiy politekhnicheskiy institut (Odessa Polytechnical Institute)

KUTSENKO, A.N.; VARTANOV, V.G.

Use of a high-voltage pulse discharge in liquid dielectrics in producing finely divided metal powders. Nauch. zap. Od. politekh. inst. 41:65-67 '62. (MIRA 17:4)

S/139/63/000/001/019/027
E202/E420

AUTHORS: Kutsenko, A.N., Korinev, A.V.

TITLE: Temperature of spark discharge in liquid

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.1, 1963, 112-114

TEXT: The authors evaluated electron temperature in a channel of a condensed spark discharge in water using spectroscopic methods. A battery of condensers of 0.25 to 1.25 μF was charged through a resistance from the high voltage rectifier up to a voltage U = 25 kV and then discharged in water over a distance of ℓ = 3 to 4 cm. Spark radiation emerging through quartz windows built into the bath was focused on the slit of a ИСП-28 (ISP-28) spectrograph. The spectra photographed on emission spectrum film type СП-2 (SP-2) were found to be continuous and similar to the high current spark discharges in the gases. The intensity of such radiation is given by

$$I_\nu = A\, n_e^2\, T_e^{-\frac{1}{2}}\, e^{-\frac{h\nu}{kT_e}}$$

where I - intensity of the bremsstrahlung, A - a constant,

Card 1/3

Temperature of spark ...

n_e - concentration of electrons in plasma. By comparing the intensities of radiations I_1 and I_2 for frequencies ν_1 and ν_2 it is possible to determine the electron temperature T_e. Since the films have approximately equal spectral sensitivity in the region of 3800 to 4400 Å, it was possible to measure the distribution of radiant energy in the relative units I/I_o along the wavelengths. These data gave a straight line when plotted as log I/I_o vs $h\nu/k$. The slope of this curve θ gave T_e, viz. $T_e = \cot \theta$. It was found that with $U = 25$ kV, $l = 4$ cm and $C = 1.25$ μF, the electron temperature is of the order of 2×10^4°K. In addition to the photometric studies, oscillographic measurements were also taken. Pulses from a УМ-2 (UM-2) monochromator were passed to spectrophotometric multiplier ФЭУ-29 (FEU-29) and from there to the oscilloscope ЭО-58 (EO-58). The oscillograms showed the change in the intensity with time for a definite wavelength range $d\lambda$, and also the duration of the radiating discharge channel. The latter varies within the range of 150 to 3000 μ sec. However, quantitative measurements of $I = f(t)$ were found to be difficult since they could only be

Temperature of spark ...

referred to different discharges taking place at different times. The voltage across the discharge path in water and the current passing through it were measured by means of a double beam oscilloscope OK-21. The pulse duration was 5 to 6 μ sec and the current attained 10 kA. The power dissipated in the channel was 107 W. There are 3 figures.

ASSOCIATION: Odesskiy politekhnicheskiy institut
(Odessa Polytechnic Institute)

SUBMITTED: November 24, 1961

Card 3/3

L 25119-65 EWT(1)/EWT(m)/EWP(k)/EWP(b)/EWA(d)/EWP(t) Pf-4/Pl-4 JD/JW

ACCESSION NR: AR4046135 S/0275/64/000/008/A023/A023

22

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 8A146

AUTHOR: Kutsenko, A. M.

TITLE: Spark discharge in a liquid

CITED SOURCE: Nauk. zap. Odes'k. politekhn. in-t, v. 50, 1963, 17-26

TOPIC TAGS: spark discharge, spark discharge in liquid

TRANSLATION: High voltage spark discharge in a liquid was studied experimentally. A voltage (0--100 kv) from a capacitor bank, via an air gap, was applied to the electrodes immersed into a liquid. Voltage across the spark gap, current in the spark gap, pressure at the shock-wave front, and the speed of the spark-channel head were measured. The electron temperature in the spark channel $T_e = (1--3)\times10^4$K was determined by measuring the intensity of radiation in the ultraviolet part of the spectrum. T_e estimated from the measured conductance is also close to the above value. Also the characteristics of a sound impulse accompanying the spark discharge in a liquid were measured.

SUB CODE: EM, ME ENCL: 00

Card 1/1

GLAVATSKIY, D.Ye. [Hlavats'kyi, D.IU.]; KORTNEV, A.V. [Kortniev, A.V.]; KUTSENKO, A.N. [Kutsenko, A.M.]

Effect of high-voltage pulse discharges on crystallization. Ukr. fiz. zhur. 9 no.1:96-97 Ja '64. (MIRA 17:3)

1. Odesskiy politekhnicheskiy institut.

ACCESSION NR: AP4036571 S/0139/64/000/002/0147/0148

AUTHORS: Glavatskiy, D. Ye.; Kortnev, A. V.; Kutsenko, A. N.

TITLE: Crystallization of solutions under high-voltage pulse discharge

SOURCE: IVUZ. Fizika, no. 2, 1964, 147-148

TOPIC TAGS: high voltage, arc discharge, crystallization, tartaric acid, ultrasonic pulse, water solution, OK 17M oscillator, E 149 ultrathermostat, RL refractometer, MBI 3 microscope

ABSTRACT: The effect of high-voltage-condenser arc discharge on the kinetics of crystallization of saturated tartaric-acid water solution was studied experimentally. A battery condenser of 1-25 microfarad capacity was charged up to 15 kv potential through KRM-150 kinotrons and then discharged over a 6-8-mm gap in the solution. Current through the gap was measured by the two-beam oscillator OK-17M. Successive pulse frequencies were 40 sec. Temperature was controlled to 0.1C by means of an E-149 ultrathermostat. Changes in solution concentration during the experiment were monitored by an RL refractometer, with a TC-15 thermostat control. The results were compared to mechanical mixing and to 0.5 v/cm ultrasonic-field

Card 1/2

ACCESSION NR: AP4036571

pulse techniques. It was found that the discharge method substantially shortens the latent period and speeds up the crystallization process. The crystal dimensions were measured by an MBI-3 microscope with an objective micrometer. The average size was 0.1 mm and the maximum size was 0.5 mm. Orig. art. has: 2 figures.

ASSOCIATION: Odesskiy politekhnicheskiy institut (Odessa Polytechnical Institute)

SUBMITTED: 010ct62	ATD PRESS: 3068	ENCL: 00
SUB CODE: SS, EC	NO REF SOV: 008	OTHER: 000

Card 2/2

ACCESSION NR: AP4033406 S/0076/64/038/003/0737/0738

AUTHOR: Glavatskiy, D. Ye.; Kortnev, A. V.; Kutsenko, A. N.

TITLE: The effect of high voltage pulse discharge in liquids on the crystallization process.

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 3, 1964, 737-738

TOPIC TAGS: impulse discharge, spark discharge, crystallization process, tartaric acid, sedimentation analysis, high voltage pulse discharge

ABSTRACT: The effect of high voltage condensed spark discharge on the crystallization kinetics of saturated tartaric acid solutions was studied. A bank of capacitors (charged up to U=3 kv) was discharged in a solution between two steel electrodes, separated by a 2 mm gap, at a frequency of 15 to 20 pulses/min. The 4 liter non-corrosive steel container was placed in a thermostat controlled with accuracy of ± 0.1 C. For this purpose an ultrathermostat, type E149, was used. The saturated solution obtained at 50 C was gradually cooled to 20 C and filtered. The change in concentration was measured by an RL refractometer. The average

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ACCESSION NR: AP4033406

results of five experiments showed that crystallization begins after 5 - 10 pulses with the rate of the process increasing rapidly and after 250 to 300 impulses the process is fully completed. The crystal distribution was studied by sedimentation analysis at 20 C with a saturated solution of tartaric acid serving as the dispersion solution. The maximum crystal sizes, determined by means of a MBI-3 microscope were ~0.2 to 0.25 mm and the maximum from the differential curve for crystal distribution F(c) corresponded to the more probable values of 0.03 to 0.04 mm. It was shown by the Fourier integral curve that the audio impulse which accompanies the discharge lasts from 20 to 40 micro sec. and it consists of frequencies from 0 to 10 - 15 kc. The spark discharge is accompanied by electromagnetic radiation and electrolysis which helps in seeding of a large number of crystallization centers. The impact wave, formed in the solution, disperses the already formed crystallization centers and thus enhances the process. It is concluded that spark discharge in liquids may serve as one of the methods for initiation of the crystallization process in saturated solutions. Orig. art. has: 2 figures.

ASSOCIATION: Odesskiy politekhnicheskiy institut (Odessa Polytechnic Institute)

SUBMITTED: 19Feb63 ENCL: 00

Card 2/3

ACCESSION NR: AP4033406

SUB CODE: GC NO REF SOV: 008 OTHER: 00

Card 3/3

L 4215-66 EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2/EWP(t) EWP(k)/EWP(b)/
EWA(c) IJP(c) JD/HW/AT
ACCESSION NR: AP5024133 UR/0185/65/010/009/1033/1035

AUTHOR: Kutsenko, A. M.; Kortnyev, A. V.

TITLE: The temperature of spark discharges in liquids

SOURCE: Ukrayins'ky fizychnyy zhurnal, v. 10, no. 9, 1965, 1033-1035

TOPIC TAGS: gas discharge plasma, gas discharge spectroscopy, plasma temperature

ABSTRACT: Few data are available on the temperature of spark discharges in liquids. The present paper gives experimental data concerning the temperature and some other properties of spark discharges in water (see Tables 1 and 2 of the Enclosure). The temperature of the plasma is calculated by means of the approximate equation

$$T_e \approx \frac{h}{k\frac{d}{d\nu}\ln J(\nu)} \qquad (1)$$

where h and k are Plank's and Boltzmann's constants, respectively, and $d(\ln J(\nu))/d\nu$ is obtained from the slope of the spectral characteristics. The equation is obtained from a quasi-classical expression for the total exchange recombination intensity. The authors also determine the spark discharge temperature in high voltage condensed sparks in the air and in the region bounded by liquid using the

Card 1/4

L 4215-66

ACCESSION NR: AP5024133

intensities of the 5105.54 and 5153.24 Å lines. With a voltage of U = 25 kv, interelectrode distance of l = 1.5 cm, and battery capacitance C = 1.25 μf, the temperatures are T ∿ $1.5 \cdot 10^4$K and ∿ $2 \cdot 10^4$K, respectively. Orig. art. has: 3 formulas, 3 figures, and 2 tables. [08]

ASSOCIATION: Odes'kyy politekhnichnyy institut (Odessa Polytechnic Institute)

SUBMITTED: 29May63 ENCL: 02 SUB CODE: ME

NO REF SOV: 005 OTHER: 002 ATD PRESS: 4121

Card 2/4

L 4215-66

ACCESSION NR: AP5024133 ENCLOSURE: 01

Table 1. Spark discharge in water

C, μf	U = 25 kv, l = 2.5 cm, $\sigma_{H_2O} = 5 \cdot 10^{-5}$ ohm^{-1} cm^{-1}; copper tip-tip electrodes		
	T_e, °K	I_{max}, ka	p, atm
1.25	$2 \cdot 10^4$	6	65
1	$1.8 \cdot 10^4$	4.8	36
0.75	$1.7 \cdot 10^4$	3.6	28
0.5	$1.6 \cdot 10^4$	2.4	8
0.25	—	1.2	4

Card 3/4

L 04215-66
ACCESSION NR: AP5024133

ENCLOSURE: 02

Table 2. Spark discharge in water

l, cm	U = 25 kv, C = 1.25 μf, $\sigma_{H_2O} = 5 \cdot 10^{-5}$ ohm^{-1} cm^{-1}; copper tip-tip electrodes		
	T_e, °K	I_{max}, ka	p, atm
1	—	10.6	65
2	$2.6 \cdot 10^4$	7.2	72
3	$1.9 \cdot 10^4$	5.2	58
4	$1.75 \cdot 10^4$	4.5	28
5	$1.7 \cdot 10^4$	4.1	—
6	$1.65 \cdot 10^4$	3.8	—

Card 4/4 DP

KORTNEV, Andrey Vasil'yevich; KUBLEV, Yuriy Vladimirovich; KUTSENKO, Alfred Nikolayevich; IVANOV, I.A., red.; GARINA, T.D., tekhn. red.

[Laboratory manual on physics] Praktikum po fizike. Izd.2., dop. Moskva, Vysshaia shkola, 1963. 515 p.
(MIRA 17:2)

KORTNEV, Andrey Vasil'yevich; RUBLEV, Yuriy Vladimirovich; KUTSENKO, Al'fred Nikolayevich; IVANOV, I.A., red.; GRIGORCHUK, L.A., tekhn. red.

[Practical work in physics] Praktikum po fizike. Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 426 p. (MIRA 15:2)
(Physics—Laboratory manuals)

KUTSENKO, Aleksandr Vasil'yevich; KRASKOVSKAYA, S.N., inzh., retsenzent; OZEMBLOVSKIY, Ch.S., inzh., red.; CHERNYSHEV, V.I., red.; VASIL'YEVA, N.N., tekhn. red.

[Repair of traction motors and auxiliary machines of a.c. locomotives; work practices in the Zlatoust railroad repair shop of the Southern Ural Railway] Opyt remonta tiagovykh dvigatelei i vspomogatel'nykh elektrovozov postoiannogo toka; depo Zlatoust IUzhno-Ural'skoi dorogi. Moskva, Transzheldorizdat, 1963. 39 p. (MIRA 17:4)

KUTSENKO, A.V., luchshiy master po remontu lokomotivov zheleznykh dorog SSSR

This is how we have increased labor productivity. Elek.i tepl. tiaga 7 no.1:15-18 Ja '63. (MIRA 16:2)

1. Master elektromashinnogo tsekha depo Zlatoust Yuzhno-Ural'skoy dorogi.
(Railroads—Employees) (Locomotives—Maintenance and repair)

KUTSENKO, N.A.

2852

PHOTOPRODUCTION OF NEUTRAL π MESONS FROM DEUTERONS. A. S. Belousov, A. V. Kutsenko, and E. I. Tamm. Izvest. Akad. Nauk S.S.S.R. Ser. Fiz. 19, 605-6(1955) Sept.-Oct. (In Russian)

The cross sections for photoproduction of π^0 mesons from d, He^4, and C^{12} and other nuclei, with or without disintegration of the nucleus, have been proven to be of the same magnitude. The experimental studies of the photoproduction of π^0 mesons from deuterons: $\gamma + d \rightarrow \begin{cases} d + \pi^0 \\ p + n + \pi^0 \end{cases}$, made with the γ rays of the 250-Mev synchrotron, gave similar cross sections for both reactions, confirming the hypothesis of the π-meson field isotropic invariability. (R.V.J.)

USSR/Nuclear Physics - Relativistic particles [illegible] FD-577

Card 1/1 Pub. 146 - 36/44

Author : Likhachev, V. M.; Kutsenko, A. V.; Voronkov, V. P.

Title : Problem of the investigation of relativistic particles by the method of nuclear photo-emulsions in an impulse magnetic field

Periodical : Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 894-895

Abstract : The emulsion method rarely solves the problem of the sign and exact energy of particles. This problem can be solved more completely if the nuclear emulsion is placed during irradiation into a powerful magnetic field, computations showing that sign and impulse (momentum) analysis of particles according to magnetic bending can be carried out sufficiently accurately only in magnetic field strengths of the order 1 to $1.5 \cdot 10^5$ G and higher, which is at present possible only in the form of individual impulses. In works with accelerators also giving beams of particles by individual impulses, the present authors found the use of impulse magnetic fields very convenient thanks to the possibility of synchronization of the beam of particles and the field (they acknowledge that the idea of creating such an arrangement was proposed by G. M. Strakhovskiy in 1951). They employed such an impulse magnetic field for measuring the spectra of photons from the synchrotron of the Physical Institute, Acad. Sci. USSR. The apparatus consists of a current oscillator (P. L. Kapitsa, Proc. Roy. Soc., A 105, 1924), coil and control. They thank Professor V. I. Veksler for assistance.

Institution: Physical Institute im. P. N. Lebedev, Acad. Sci. USSR

Submitted : August 12, 1955

KUTSENKO, A. V.

USSR/ Physics - π^0 Mesons

Card 1/1 Pub. 22 - 18/54

Authors : Belousov, A.S.; Kutsenko, A. V.; and Tamm, Ye.I.

Title : The photo-generating process of π^0 mesons on deuterons

Periodical : Dok. AN SSSR 102/5, 921-923, June 11, 1955

Abstract : The photo-generating of neutral (π^0) mesons on deuterons was investigated. The following reactions were conducted $\gamma + d \rightarrow \begin{cases} d + \pi^0, \\ p + n + \pi^0. \end{cases}$ The experiments were intended to prove the hypothesis of isotopic invariance. Four references: 1 USA and 3 USSR (1952-1954). Diagram; graph.

Institution : The Acad. of Sc., USSR, P. N. Lebedev Physical Institute

Presented by : Academician V. N. Kondrat'ev, February 17, 1955

ZOTOV, I.V.; KUTSENKO, A.V.

Measuring the function of pulse correlation in two counting channels. Prib. i tekh. eksp. no.1:38-42 Jl-Ag '56. (MLRA 10:2)

1. Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR.
(Nuclear counters) (Pulse techniques (Electronics))

KUTSENKO, A.V.

8

4675. ELASTIC SCATTERING OF γ-RAYS OF ENERGIES UP TO 120 MeV BY PHOTONS. B.B. Govorkov, V.I. Gol'danskii, O.A. Karpukhin, A.V. Kutsenko and V.V. Pavlovskaya. Dokl. Akad. Nauk SSSR, Vol. 111, No. 5, 988-(1956). In Russian.

Gamma rays from synchrotron electrons are registered in a telescope of scintillation counters. The results [illegible] ward peaking, and are slightly inconsistent with the calculation carried out by Powell assuming a static magnetic moment.

G.F. [illegible]

Kutsenko, A.V.

AUTHORS: Gerasimov, A.G., Gorbunov, A.N., Ivanov, Yu.S., Kutsenko, A.V., Spiridonov, V.M.

TITLE: A Wilson Chamber for Work in the Beam of Cyclotron Radiation and the Auxiliary Apparatus (Kamera Vil'sona dlya raboty v puchke izlucheniya sinkhrotrona i vspomogatel'naya apparatura)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, pp.10-14 (USSR)

ABSTRACT: A Wilson cloud chamber which operates in a magnetic field is described. It can be used to study photonuclear reactions. The working regime has already been given in a previous paper (Ref.1). In the present paper a description is given of the various parts of the chamber and of the auxiliary apparatus, i.e., the control apparatus, the apparatus synchronizing the work of the chamber with that of the synchrotron, and the apparatus used to measure the intensity of the emitted pulses which are recorded by the Wilson camber. An important part of the chamber is an organic film 70μ thick which serves as the window through which the γ-rays enter the sensitive volume. The film is 50 mm in diameter and can withstand a pressure of the order of 3-4 atmospheres. The method of mounting of the film is shown

Card 1/3

A Wilson Chamber for Work in the Beam of Cyclotron Radiation and the Auxiliary Apparatus.

in Fig.1. An electrostatic field of ~40 V/cm is established between the glass lid and the bottom of the chamber. This field removes ions formed within the volume of the chamber during irradiation. The pressure in the lower volume of the chamber is stabilised to ~0.01 atm. using a mechanical pressure stabiliser shown in Fig.4 and developed by D. V. Khel'yanov. A detailed description is given of the controlling and synchronizing devices. "Exact" operations (expansion of the chamber, separation of single pulses, illumination, etc.) are controlled by the circuit shown in Fig.4 and the "rough" operations are controlled by the circuit of Fig.5. The absolute beam intensity was obtained by measuring the β activity of a graphite specimen placed in the γ-beam. The chamber was used to study photodisintegration of He at a maximum energy of 170 MeV. A typical photograph of the $He^4(\gamma p)H^3$ reaction is shown in Fig.7. Thanks are given to P.A.Cherenkov for help and interest. There are 7 figures, no tables and 5 references, of which 3 are Russian and 2 are English.

Card 2/3

A [illegible] for Work [illegible] the Beam of Cyclotron Radiation and the Auxiliary Apparatus.

AUTHOR: Institute of Physics imeni P.N. Lebedev AS USSR
(Fizicheskiy Institut im. P.N. Lebedeva AN SSSR),

SUBMITTED: November 3, 1956.

AVAILABLE: Library of Congress.

1. Cloud chambers-Operation

KUIDENKO, A. V.

"Dependence of Cross Section for Photoproduction of π^0-Mesons on Mass Number of Nuclei," by B. B. Govorkov, V. I. Gol-danskiy, O. A. Karpukhin, A. V. Kutsenko, and V. V. Pavlovskaya, Doklady Akademii Nauk SSSR, Vol 112, No 1, Jan 57, pp 37-40

The article describes "more accurate" measurements of the variation of cross section for π^0-meson production with mass number. "A particularly careful investigation was made in the region of small A."

The experimental technique is described. The 255-Mev synchrotron of the Physics Institute, Academy of Sciences USSR, was used.

A table of the cross sections relative to that for hydrogen and a graph of relative cross section vs mass number are given. (U)

SUM. 1360

Kutsenko, M. V.

21(7) PHASE I BOOK EXPLOITATION SOV/3050

Gol'danskiy, Vitaliy Iosifovich, Andrey [illegible] Kutsenko and Mikhail Isaakovich Podgoretskiy.

Statistika otschetov pri registratsii yadernykh chastits (Statistics of Readings in Recording of Nuclear Particles) Moscow, Fizmatgiz, 1959. 411 p. 6,000 copies printed.

Ed.: B. L. Livshits; Tech. Ed.: K. F. [illegible]idno.

PURPOSE: This book is intended for research physicists in nuclear physics and elementary particles.

COVERAGE: The authors examine statistical problems in the recording of separate particles. The problems are based predominantly on discrete (Poisson and binomial) distributions. They also engage in a detailed analysis of problems relating to the observation of radioactive disintegration, statistics of readings in scaling and coincidence circuits, as well as in counters with dead time. No personalities are mentioned. References accompany each chapter.

TABLE OF CONTENTS

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SOV/120-59-2-4/50

AUTHORS: Belovintsev, K.A., Karpukhin, O.A., Kutsenko, A.V., Shapkin, A.A., and Yablokov, B.N.

TITLE: An Apparatus for Measuring the Intensity Distribution in an Expanded γ-Ray Pulse from a Synchrotron (Pribor dlya izmereniya raspredeleniya intensivnosti v rastyanutom impul'se gamma-izlucheniya sinkhrotrona)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 2, pp 15-18 (USSR)

ABSTRACT: In most cases the 280 Mev γ-ray pulse from the FIAN synchrotron is expanded to 2-2.5 μ sec (Ref 1). When this is done, it is necessary to know the intensity distribution within the γ-ray pulse. It is further desirable to be able to determine this intensity distribution continuously in order to obtain the average form of the pulse during experiments. Such measurements can be carried out using a multichannel time analyser working with a suitable probe whose count is proportional to the instantaneous intensity (e.g. a scintillation counter). However, such equipment is expensive and bulky and its use is not always justified. Instead, a single channel analyser may be used for this purpose. The γ-ray pulse passes through the "window" of the analyser which looks

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An Apparatus for Measuring the Intensity Distribution in an Expanded γ-Ray Pulse from a Synchrotron

at a definite part of the pulse at a time and records it with an appropriate counter. The particular part of the pulse must then be related to the total intensity of the expanded pulse. The device described in the present paper can carry out this operation using a step-by-step switch. A NaI(Tl) crystal working in conjunction with a FEU-19 photomultiplier is used as the γ-ray detector. The amplitude of the pulse at the photomultiplier load is proportional to the instantaneous value of the intensity of the expanded γ-ray pulse. The output from the photomultiplier is fed into two channels. The first channel (integral) sums up all the pulses fed into it and is in fact simply a monitor, and the counts recorded by it are proportional to the integral intensity of the synchrotron. The second channel is a differential one and will pass only the part of the pulse defined by the analyser "window", and the counts recorded through this channel are proportional to the intensity at the given instant of time. The width of the "window" can be either 50 or 100 μ sec. The "window" may be moved along

An Apparatus for Measuring the Intensity Distribution in an Expanded γ-ray Pulse from a Synchrotron

the time scale either by hand using a time delay circuit, or the whole pulse is split into n sections and the instrument automatically covers the whole time interval using a step-by-step switch. The circuits of the two channels are shown in Fig 2 and the time delay circuit is shown in Fig 3. The step-by-step switch is shown in Fig 4. The apparatus has been used in studying elastic scattering of γ quanta on protons (Ref 4), photo-production of π^0-mesons (Ref 3) and electron distributions associated with radial-phase oscillations.

Card 3/3 There are 4 figures and 4 Soviet references.

ASSOCIATION: Fizicheskiy Institut AN SSSR (Physical Institute of the Academy of Sciences of the USSR)

SUBMITTED: March 31, 1958

KUTSENKO, A. V., Cand Tech Sci -- "Certain problems of the radioelectronics of physical experiments on a synchrotron." Mos, 1960 (Acad Sci USSR. Phys Inst im P. N. Lebedev). (KL, 1-61, 194)

69067

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21.5300

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E192/E382

AUTHOR: Kutsenko, A.V.

TITLE: Coincidence Circuits in Nuclear Physics /9

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1, pp 3 - 16 (USSR)

ABSTRACT: The article is a review dealing with modern coincidence circuits and surveying their characteristics. Coincidence circuits can be divided into two classes: the circuits of the μs range and the circuits of the mμs range. The above distinction is not in the least artificial since the two types of circuit differ not only by virtue of their constituent elements but also by the very method of the physical interpretation of their results. Figure 1 shows block schematics of the two types of circuits and their basic characteristics, i.e. the coincidence curve and the spectrum of the pulses at the output of the receiving element. The difference between the coincidence circuits of the μs and mμs range is due principally to the present state of the pulse technique and the Geiger-Müller counters. The pulse technique does not permit amplification of mμs pulses without distortion. On the other hand, a

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Coincidence Circuits in Nuclear Physics

distortionless amplification of μs pulses is quite possible. Consequently, the spectrum of the pulses in the mμs range has the shape of the probability distribution function and its coincidence curve is sloping (see Figure 1b). The principal parameters of the coincidence circuits are: the resolving time τ; the registering efficiency ε and the dead time τ_M.

The resolving time determines the number of random coincidences and the degree of the distribution of the events in time; consequently, there are two possible interpretations of this time: τ and τ'. For a coincidence circuit in the μs range, the resolving time τ can be determined experimentally as a ratio of the random coincidences (Eq 1). The resolving time τ' can be determined from the coincidence curve (see Figure 1a) by using Eq (2), where C denotes the actual number of pairs of coinciding events registered by the counters. For the circuits of the μs range the resolving time τ determined from the random coincidences and the time τ'

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Coincidence Circuits in Nuclear Physics

obtained from the coincidence curve, are equal. The above is not true in the case of mμs circuits where τ and τ' are not equal. The quantity τ' can be referred to as the practical or the physical resolving time, while τ is known as the electrical resolving time. The counting efficiency of the coincidences depends on the geometry, efficiency and sensitivity of the counters employed as well as on the coincidence circuits and their resolving time. The absolute efficiency ε' can be expressed as:

$$\varepsilon' = \varepsilon \cdot \varepsilon_э \qquad (6)$$

where ε is the physical efficiency and
$\varepsilon_э$ is the electrical efficiency of the coincidence circuit.

The known coincidence reception elements can be divided into four types: 1) multiplication circuits:

$$f(x,y) \sim xy \qquad (8)$$

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Coincidence Circuits in Nuclear Physics

where x(t) and y(t) are input pulses, while f(x,y) is the response of the system; 2) non-linear adding circuits performing the function:

$$f(x,y) \sim \Phi(x + y) - [\Phi(x) + \Phi(y)] \qquad (9)$$

where $\Phi(x)$ and $\Phi(y)$ are the characteristics of the nonlinear elements such that $\Phi(0) = 0$;
3) circuits selecting the lower value:

$$f(x,y) \sim \min(x,y) \qquad (10)$$

where min(x,y) denotes the lower of the two quantities, x or y ; 4) phase-type circuits (where the output is independent of the amplitude):

$$f(x,y) \sim \varphi_x - \varphi_y \quad \text{and} \quad f(x, y) \neq \Phi(x,y) \qquad (11)$$

where φ_x is the phase of a pulse.

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Coincidence Circuits in Nuclear Physics

The multiplication-type coincidence circuits are usually based on a multi-electrode tube where the input pulses are applied to two control grids. Some such circuits and the principal characteristics are indicated in Table 2. The nonlinear adding circuits usually take the form of a bridge and they are based on the principle described by Rossi (Ref 11). Several such circuits are shown in Figures 3-8 and their principal characteristics are indicated in Table 3. The lower-value selecting circuits produce an output voltage which is proportional to the lower input pulse. The circuits are based on the principle of difference evaluation. A number of such difference circuits are given in Figures 9-14. The principal characteristics of a number of these circuits designed by various authors are listed in Table 4. The phase-type circuits offer, perhaps, the best approximation to an ideal coincidence-reception element. The principal characteristics of a number of known circuits of this type are shown in Figure 5, from which it is seen that their resolving time is of the order of 10^{-10} sec.

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Coincidence Circuits in Nuclear Physics

From examination of the available data it is concluded that by employing modern Geiger-Müller counters and the latest vacuum tubes and semiconductor devices, it is possible to construct the coincidence circuits having a resolving times as low as 10^{-10} to 10^{-11} sec. The coincidence-circuit technique seems to be undergoing a constant development and it appears that considerable progress is still possible in: photomultipliers, electron tubes and semiconductor elements. In particular, it has been found that the introduction of transistors can lead to a considerable amplification of the circuits. The author thanks A.S. Belousov and L.B. Kaminir for discussing this work. There are 8 figures, 5 table and 40 references, 31 of which are English, 2 German and 7 Soviet.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the Ac.Sc., USSR)

SUBMITTED: November 3, 1959

Card 6/6

82874

S/120/60/000/02/005/052
E032/E414

21,2300

AUTHORS: Vasil'kov R.G., Govorkov B.B. and Kutsenko A.V.

TITLE: A Method for Studying the Energy Dependence of Photonuclear Reaction Cross Sections on a Synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, 1960 Nr 2, pp 23-26 (USSR)

ABSTRACT: In synchrotron experiments in which various counters or pulse ionization chambers are employed it is necessary, in order to prevent over-loading, that the accelerator should work under the so called "stretched" conditions under which the radiation pulse is lengthened ("stretched") to a few microseconds. Under these conditions the gamma-ray spectrum differs appreciably from the Schiff spectrum and turns out to be altogether indeterminate, since the intensity distribution depends on the degree of "stretching". This leads to serious difficulties in studies of the energy dependence of photonuclear reaction cross-sections. The problem can be tackled in two ways. The first of these is based on varying the instant of time at which the accelerating voltage is cut off and is subject to all the difficulties mentioned above. The

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A Method for Studying the Energy Dependence of Photonuclear Reaction Cross-Sections on a Synchrotron

second approach is based on the use of "stretching" during that part of the acceleration cycle when the magnetic field is almost constant. It is then necessary to vary the magnitude of the maximum magnetic field. The common disadvantage of these methods is that they involve an alteration in the accelerator working conditions during the actual measurements. Moreover the energy dependence of the cross-sections is deduced from a large number of different experiments carried out under different conditions, and this complicates the interpretation of the results and reduces their accuracy. The method described in the present paper can be used to obtain in a single experiment with "stretched" radiation pulses, the dependence of the integral reaction yield on the maximum energy of the gamma-rays from a synchrotron. It is well-known that the maximum energy of synchrotron radiation is determined by the quantity $H\rho$ where H is the magnetic field in the gap of the magnet at the instant when the accelerated electrons strike the target.

A Method for Studying the Energy Dependence of Photonuclear Reaction Cross-Sections on a Synchrotron

and ρ is the radial position of the target. If the electrons are made to strike the target at low magnetic field, and this is continued until the field reaches its maximum value one can obtain a "stretched" radiation pulse whose energy increases throughout the process. The radiation pulse obtained in this way can be used to study the energy dependence of photonuclear reaction cross-sections. Pulses from the output of the circuit recording a given reaction must then be sorted out by a suitable kicksorter into groups corresponding to different energies. Each of the channels of the pulse height analyser should open when the field reaches the value corresponding to the energy recorded by the given channel. The method can be used provided the intensity distribution in the radiation pulse is strictly uniform. In practice, this condition is not satisfied and the form of the pulse varies during the experiment. In order to exclude these changes it is necessary to have an intensity monitor whose output can be continuously

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A Method for Studying the Energy Dependence of Photonuclear Reaction Cross-Sections on a Synchrotron

compared with the counter output with the aid of the commutator. In this way one can determine the output of each channel per unit incident intensity, and the ratio is then independent of the magnitude of the incident intensity or the form of the pulse. Thus, the method is based on the unambiguous relation between the energy of the gamma-rays and the magnetic field in the gap of the synchrotron magnet, and the continuous comparison of the kicksorter and monitor pulses as a function of the magnetic field. The simplest way in which this method can be realized in practice involves the use of time analysers. However this has two important disadvantages. Firstly usual time analysers have a uniform time scale and this means that the channels cannot be distributed uniformly along the energy scale, and the energy equivalence is lost since the field in the gap of the synchrotron magnet varies sinusoidally. Secondly, the use of a time scale instead of a magnetic field scale pre-supposes an

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unambiguous relation between them. However, this relation can be upset by instabilities in the working conditions of the accelerator. These and similar disadvantages were excluded in the present work by using a magnetic field scale, i.e. with the aid of commutating elements controlled by pulses which are directly related to given values of the magnetic field in the gap of the accelerator magnet. In the set-up described in the present paper, the disadvantages of the time analysers were, in fact, only partially removed. The particular apparatus employed makes use of a combination of a time scale and a magnetic field scale, namely, the commutating devices are controlled by pulses from the timing circuit, while the position of these pulses is made to depend on the field. A block diagram of the circuit is shown in Fig 1. The apparatus consists of a gamma-ray telescope, a differential monitor and a 10-channel time analyser. The time analyser incorporates a time scale pulse

Card 5/7 generator, which produces pulses at a variable distance

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A Method for Studying the Energy Dependence of Photonuclear Reaction Cross-Sections on a Synchrotron

from each other, two synchronized electronic commutators and two 10-channel recording devices. The channels are distributed along the energy scale by a special coupling circuit which produces a pulse when the field in the gap of the accelerator magnet passes through a pre-determined value. The apparatus can be used to obtain energy calibrations to an accuracy of $\pm$ 2%, the main error being in the measurement of the field. The method requires the monitoring of the intensity in the expanded gamma-ray pulse and this was carried out with the aid of a scintillation counter incorporating a stilbene crystal. The method was checked by measurements on the gamma-ray yield due to the disintegration of π^0-mesons from hydrogen and carbon targets, at 90° to the primary photon beam. The results obtained are in good agreement with those reported by Koester and Mills (Ref 5). Fig 5 shows the dependence of the gamma-ray yield at 90° for hydrogen on the maximum energy in the gamma-ray spectrum. The points

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A Method for Studying the Energy Dependence of Photonuclear Reaction Cross-Sections on a Synchrotron

represent the results of present measurements, and the crosses the results taken from Ref 5. There are 5 figures and 5 references, 4 of which are Soviet and 1 English.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: February 20, 1959

Card 7/7

S/056/60/038/006/018/049/XX
B006/B070

24.6900 (1138, 1191, 1559)

AUTHORS: Gol'danskiy, V I., Karpukhin, O A., Kutsenko A V., Pavlovskaya, V V

TITLE: Elastic γp Scattering at Energies of 40 - 70 Mev and the Polarizability of the Proton

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No 6, pp 1695 - 1707

TEXT: The present paper gives a detailed description of the results of scattering experiments, of the determination of the differential elastic γp scattering cross sections, and of a comparison of the results with theory. The object of the experiments was to obtain more exact data giving a definite information on the polarizability of the proton. The experiments were carried out on the 265-Mv synchrotron of FIAN in the gamma energy range of 40 - 70 Mev (maximum bremsstrahlung energy, 75 Mev), and so essentially lower than the π^0 production threshold. The experimental arrangement is schematically shown in Fig. 1. The

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Elastic γp Scattering at Energies of 40 - 70 Mev and the Polarizability of the Proton

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B006/B070

target was a cylindrical vessel (3 × 1) filled with liquid hydrogen. Two telescopes consisting of four scintillation counters with a lead converter behind the first and an aluminum filter in front of the last served as high-threshold (≈35Mev) gamma detectors. Each counter was connected with an ФЭУ-33 (FEU-33). The block diagram of the electronic apparatus is shown in Fig. 2. A thin-walled ionization chamber placed in front of the first collimator served as an intermediate monitor. The duration of the electron pulses of the synchrotron was up to ≈300 μsec. The detecting telescopes were placed at angles of 45, 75, 90, 120, 135 and 150° with respect to the bremsstrahlung beam. The experimental conditions and the apparatus are thoroughly described in the paper. One section is devoted to the description of the telescope efficiency and one to the evaluation of the experimental results. A table gives the measured values of $d\sigma/d\Omega$, the necessary corrections and the final values. The determination of the corrections for the background and for the absorption in the target and the determination of the systematic errors are discussed in the text.

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Elastic γp Scattering at Energies of 40 - 70 Mev and the Polarizability of the Proton

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The data obtained are compared with the theoretical results which were obtained by taking into account the anomalous magnetic moment of the proton and the effects of mesonic cloud polarization (see Fig 5). From $d\sigma/d\Omega(90^\circ) = (1.10 \pm 0.05)\ 10^{-32}$ cm^2 steradian, the proton polarizability (electric) was found to be: $\alpha_E = (11 \pm 4)\ 10^{-43}$ cm^3. If dispersion relations are used in addition to the experimental results, it is possible to calculate, from the pion photoproduction data, the sum of electric and magnetic polarizability: $\alpha_E + \alpha_M = 1 \cdot 10^{-43}$ cm^3 (Fig 6). Then, taking into account also the errors, one finds $\alpha_E = (9 \pm 2) \cdot 10^{-43}$ cm^3 and $\alpha_M = (2 \pm 2) \cdot 10^{-43}$ cm^3. The results are finally discussed and compared with results of other authors. In particular, the results of neutron polarizability obtained by various authors are discussed and intercompared. From the value $\alpha_E = 9 \cdot 10^{-43}$ cm^3 obtained for protons, the root-mean-square fluctuation of the proton electric dipole length is found to be $(\bar{r}^2)^{1/2} = 3.5 \cdot 5 \cdot 10^{-14}$ cm.

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Elastic γp Scattering at Energies of 40 - 70 Mev and the Polarizability of the Proton

S/056/60/038/006/018/049/XX
B006/B070

S P Balat'yev, R G Vasil'kov, Ye V Minarik, and A Samiullin are thanked for assistance, G Ivanov for help in the evaluation of measurements; and A M Baldin and V N Gribov for discussions. Ye A Aleksandrov and V A Petrun'kin are mentioned. There are 6 figures, 1 table, and 30 references: 10 Soviet, 18 US, and 2 Dutch.

ASSOCIATION: Fizicheskiy institut im P N Lebedeva Akademii nauk SSSR (Institute of Physics imeni P N Lebedev of the Academy of Sciences USSR)

SUBMITTED: January 12, 1960

Card 4/7

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B006/B070

45	4,66±0,28	−148	3,40±0,28
75	1,21±0,08	−12,6	1,12±0,08
90	1,14±0,05	−7,7	1,10±0,05
120	1,30±0,08	−1,6	1,34±0,08
135	1,48±0,08	−1,0	1,56±0,08
150	1,82±0,07	−0,4	1,03±0,07

Fig. 1

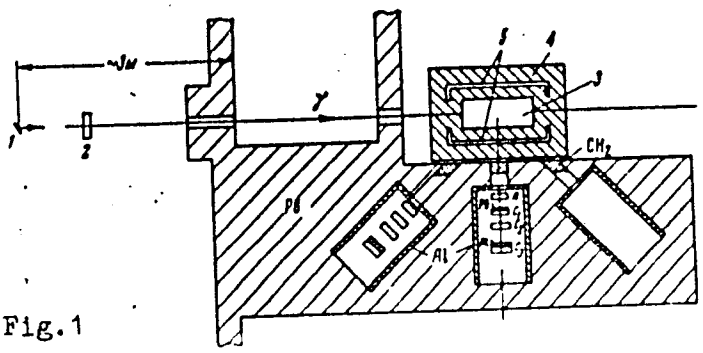

Fig.1

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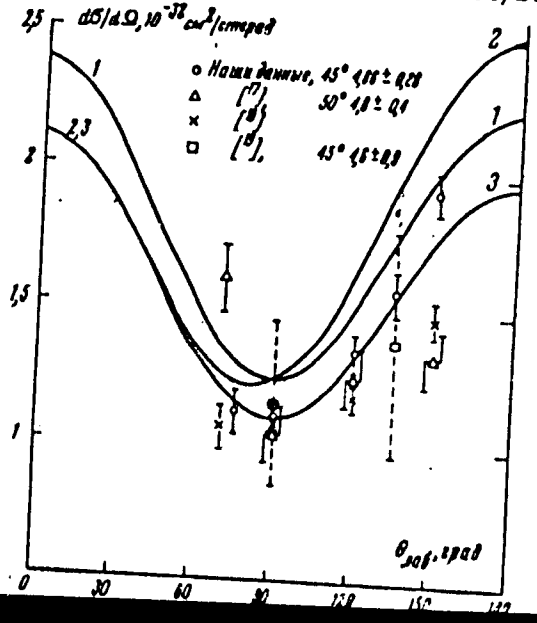

Fig. 5

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Legend to Fig. 1: 1 - synchrotron target; 2 - monitor; 3 - liquid hydrogen target; 4 - polystyrene walls; 5 - liquid N_2; C_1, C_2, C_3 scintillation counters in coincidence; A - anti-coincidence counter

Headings of the four columns of the table: angle ϑ [degrees]; 10^{32} $d\sigma/d\Omega cm^2$/steradian (without corrections); total corrections; 10^{32} $d\sigma/d\Omega cm^3$/steradian (final values) Legend to Fig 5: Comparison of the experimental results in this paper (o) in the laboratory system with other experimental results and with theoretical curves

Card 7/7

L 16015-65 EWT(m) DIAAP/AEDC(b)
ACCESSION NR: AP4044666 S/0120/64/000/004/0038/0043

AUTHOR: Kutsenko, A. V.; Maykov, V. N.; Pavlovskaya, V. V.

TITLE: Cherenkov total-absorption γ-spectrometer 19 B

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 38-43

TOPIC TAGS: spectrometer, gamma spectrometer, Cherenkov gamma spectrometer, total absorption, resolution, energy resolution, total absorption gamma spectrometer

ABSTRACT: A variant of the Cherenkov total-absorption γ-spectrometer which utilizes a conic radiator made of lead glass and only one photomultiplier is proposed. Its characteristics were investigated by a synchrotron whose maximum γ-quantum energy was 680 Mev. The operating frequency of the accelerator was 1 pulse/6 sec, and the mean number of electrons in a pulse was 10^{10}. The duration of the radiation pulse was increased to 8 μsec during calibration. It was found that the energy resolution varies from 43 to 19% over the range of 80–600 Mev. The use of only one photomultiplier eliminated the need for sum

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ACCESSION NR: AP4044666

circuits and simplified the design and tuning of the device. Compared with similar devices the spectrometer is claimed to possess a better energy resolution in the 80—600 Mev energy range. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute AN SSSR)

SUBMITTED: 18Jul63 ENCL: 00

SUB CODE: EC NO REF SOV: 005 OTHER: 004

Card 2/2

ALEKSANDROV, Yu.A.; KUTSENKO, A.V.; MAYKOV, V.N.; PAVLOVSKAYA, V.V.

Time characteristics of a Cherenkov spectrometer of total absorption. Prib.i tekhn.eksp. 10 no.5:45-48 S-O '65. (MIRA 19:1)

1. Fizicheskiy institut AN SSSR, Moskva. Submitted August 21, 1964.

L 23129-66 EWT(l)/EWA(h)
ACC NR: AP6001572 (A) SOURCE CODE: UR/0120/65/000/006/0084/0089

AUTHOR: Aleksandrov, Yu. A.; Kutsenko, A. V.; Maykov, V. N.; Pavlovskaya, Y. Y.; Solov'yev, S. G.

ORG: Institute of Physics, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: Using an AI-100 pulse analyzer as a storage device

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 84-89

TOPIC TAGS: pulse analyzer, computer storage device/ AI-100 pulse analyzer

ABSTRACT: The remodeling of an AI-100 pulse analyzer for purposes of measuring two simultaneous pulses is described; a fifth program ("storage operation") is introduced into the AI-100. The storage is controlled from the outside, while the arithmetic unit is used for receiving and recording two simultaneous pulse trains. The resulting storage device has a constant dead time at its two inputs of 120 μsec, a pulse-height range of 1—100 v, and 99 storage addresses for synchronously recording the results of measuring two pulses. Tables of operations and commands are given. Such a remodeled analyzer has been used for one year in conjunction with two Cerenkov total-absorption spectrometers (with the 680-Mev FIAN synchrotron). Orig. art. has: 1 figure and 2 tables.

SUB CODE: 09 / SUBM DATE: 23Nov64 / ORIG REF: 002

Card 1/1 UDC: 621.374.3

L 28055-66 EWT(1)/ETC(m)-6 IJP(c) WW

ACC NR: AP5027006 SOURCE CODE: UR/0120/65/000/005/0045/0048

AUTHOR: Aleksandrov, Yu. A.; Kutsenko, A. V.; Maykov, V. N.; Pavlovskaya, V. V.

ORG: Institute of Physics of AN SSSR, Moscow (Fizicheskiy institut)

TITLE: Time characteristics of Cerenkov total-absorption spectrometer

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 45-48

TOPIC TAGS: gamma spectroscopy, Cerenkov radiation, Cerenkov counter, photomultiplier tube

ABSTRACT: In order to investigate the resolving time of a Cerenkov spectrometer, a method of coincidence circuits was applied. A spectrometer (described in PTE 1964, no. 34, p. 38) with a 300-mm radiator was used. The light from the radiator was collected by the FEU-49 photomultiplier tube. The coincidence circuit was formed by the addition of two FEU-36 photomultipliers which had an adequate amplification factor and a time spread not greater than 2 nsec. By such an arrangement a resolving time of about 4×10^{-9} sec was obtained without diminishing the 100-pct efficiency of recording the gamma quanta in the range from 100 to 600 Mev. After a preliminary theoretical study, the experiments

UDC: 539.1.074.4

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ACC NR: AP5027006

were conducted and the performance of the coincidence circuit was tested. The experimental curves showed that at the electron energy of 100 Mev, a 100-pct efficiency of recording was attained when two additional FEU-36 photomultipliers were included in the circuit. The dependence of the recording efficiency upon the resolving time was also investigated and the curves of "delayed" coincidences were plotted for electron beam energies of 100 and 500 Mev. In the case of 100 Mev, the best resolving time was 4.7×10^{-9} sec while at 500 Mev the 100-pct efficiency was attained at about 4×10^{-9} sec. The comparison of these results with the data published by other authors showed the superiority of the above arrangement. The authors expressed their appreciation to Ye. M. Leykin for the discussion of various problems, to T. I. Kovaleva for the selection of FEU-36 tubes and the assistance in measurements, and to the personnel operating the 680-Mev synchrotron. Orig. art. has: 3 graphs, 1 table and 1 formula.

SUB CODE: 18 / SUBM DATE: 21Aug64 / ORIG REF: 003 / OTH REF: 003

Card 2/2 CC

ACC NR: AP6022040 SOURCE CODE: UR/0120/66/000/003/0221/0222

AUTHOR: Aleksandrov, Yu. A.; Kutsenko, A. V.; Maykov, V. N.; Pavlovskaya, V. V.

ORG: Physics Institute, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: A water soluible epoxial glue for scintillation counters

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 221-222

TOPIC TAGS: glue, epoxy plastic, photomultiplier, cerenkov counter, scintillation counter

ABSTRACT: A water-soluble glue for use in scintillation counters, Cerenkov spectrometers, and other similar equipment has been developed. The glue provides good, uniform optical and mechanical contacts between photoelectric amplifiers and irradiating or light-conducting media. The glue is made from a DEG-1 epoxial resin (a glycerin compound) and a DEG-1 hardener. The glue maintains its consistency 40 to 60 min after it is prepared; it requires approximately 20 hr to fully harden. It takes from several hours to several days to dissolve the glue joints depending on their thickness, the temperature, and rate-of-flow of water, and the surface area of the joint that is exposed to water. The light conducting properties of the glue have been studied on scintillation counters and have been found satisfactory. The authors thank Ye. S. Potekhina, L. A. Skrylova, and Ye. M. Blyakhman for consultations and for supplying the specimens.

SUB CODE: 18,11,09/ SUBM DATE: 14May65/ ORIG REF: 001/ OTH REF: 001 UDC: 539.1.074.3

Card 1/1

ACC NR: AP7001938 SOURCE CODE: UR/0120/66/000/012/0050/0054

AUTHOR: Aleksandrov, Yu. A.; Kutsenko, A. V.; Maykov, V. N.; Pavlovskaya, V. V.

ORG: Physics Institute, AN SSSR, Moscow (Fizicheskiy institut AN SSSR, Moskva)

TITLE: A system of correlated Cherenkov spectrometers with analysis of data on an M-20 computer

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 50-54

TOPIC TAGS: nuclear radiation spectrometer, spectrometer, Cerenkov counter, computer application

ABSTRACT: A system designed to measure correlated γ-quanta or electrons in the 100—600-Mev range is described. The system, originally designed to study neutral particles generated by a 680 Mev synchrotron, consists of two full-absorption Cherenkov spectrometers working either in a coincidence or an anticoincidence mode, recording and storage logic circuits, and calculating and output equipment. The recording and storage logic circuits consist of an AI-100 analyzer with a changeable program, linear amplifiers, and transistorized and tunnel-diode logic circuitry. Control and calculation is performed by an M-20 computer.

Card 1/2 UDC: 539.1.074.04

ACC NR: AP7001938

Input to the computer is on 80-column punched cards. The output equipment comprises a card punch (the output card punch of the M-20 computer), an EUM-23 electric typewriter, and a number of calculating devices of the PS-100 system. The system output is a 100 x 100 x,y printed matrix. Information along the x and the y axes indicates the pulse amplitude registered by the first and second spectrometers. Some of the system parameters are: energy resolutions, ± 21.5—9.5%; resolving time of the two spectrometers connected for coincidence, 5 nsec; dead time when registering occurrences, 130 nsec; capacity of the operating intermediate memory, 99 addresses with 16 bits in each; readout time from the intermediate memory, 10 sec (on a punched card); system process time for 10,000 numbers (including input and output time), 10 min. Orig. art. has: 1 figure

SUB CODE: 18/ SUBM DATE: 17Nov65/ ORIG REF: 007/ OTH REF: 002

Card 2/2

KUTSENKO, A.Ye.

Long-term storage of Moscow Basin coal. Sakh.prom. 27 no.4:22-24 Ap '53. (MLRA 6:6)

1. Voronezhskiy sakhsveklotrest. (Coal--Storage)

✓ **Composition and genesis of the loess of Hungary.** I. D. Sedletskii, V. P. Anan'ev, and A. P. Kutsenko (V. M. Molotov State Univ., Rostov). *Doklady Akad. Nauk S.S.S.R.* 94, 949–52(1954).—The loess samples were studied as both rock and as individual fractions. Study of the compn. of these samples was made by the following methods: microscopic, x-ray, thermal, and chromatographic. Carbonate and pH were detd. and chem. analysis of the fine fractions was made. A table of mineralogical compn. data for the coarse fractions is included, as are some thermal curves for the fine fractions. Gladys S. Macy

62

(2)

SKOBEYTSKIY, I.D.; ANAN'YEV, V.P.; KUTSENKO, A.Ye.

Glacial deposits as a source of loess dust. Biul.Kom.chetv.per. no.20:60-70 '55. (MLRA 8:11)

(Loess)

KUTSENKO, A.Ye.

Use of juice vapor condensate for feeding steam boilers. Sakh.prom.30 no.6:30-34 Je '56. (MLRA 9:9)

1.Voronezhskiy sakhsveklotrest.
(Sugar industry) (Feed water)

[redacted], ...Ye.

Problems relative to fuel supply and correct combustion.
Mekh.gron. 11 no.[illegible] [illegible] 1:8)

1.Voronezhskiy sakharoklotrest.
(Combustion) (Boilers)

KUTSENKO, A.Yu.

Considerations in the choice of an evaporation arrangement and condensate return systems. Sakh. prom. 32 no.2:36-40 F '58. (MIRA 11:3)

1. Voronezhskiy sakhsveklotrest.
(Sugar manufacture) (Evaporation)

KUTSENKO, B.

Carry out continuous control over the accumulation of the factory fund. Fin.SSSR 17 no.11:70-72 N '56. (MLRA 9:12)
(Finance)

Kutsenko, E.

The K-absorption edges for components of ternary alloys in nickel-cobalt bases. S. D. Gertsriken, I. Ya. Dekhtyar, S. M. Kaplun, and E. Kutsenko. *Nauk. Zapiski, Kiev. Derzav. Univ. im. T. G. Shevchenka* 14, No. 8, *Fiz. Zb.* No. 7, 121-3(1955).—The wave lengths of the K-absorption edges for Ni, Co, Mn, and Fe in ternary alloys Ni-Co-Mn and Ni-Co-Fe were measured. The variation of the wave length is related to the variation in binding energy in the solns. The cohesion of the Fe group elements is related to the magnetic and high temp. strengths in a general fashion.

R. W. Girard

KUTSEL[illegible], P.E., [illegible]; [illegible], [illegible]

[illegible] performance diagram [illegible] excavator [illegible] ayer transportation. Gor. zhur. no.7:77 [illegible]

[illegible].

TURUTA, N.U., kand. tekhn. nauk; BLAGODARENKO, Yu.L.; BAKHTIN, O.F.; KUTSENKO, F.F.

Seismic effect in the use of various types of charges and short-delay blasting. Met. i gornorud. prom. no.6:54-55 N-D '65. (MIRA 18:12)

KUTSENKO, G.; DUVANKOV, G.; AREFINA, V. (Permskaya obl, st. Utes); KOLGANOV, I., yurist

Editor's mail. Okhr. truda i sots. strakh. 5 no.8:44-45 Ag '62.
(MIRA 15:7)

1. Vneshtatnyy tekhnicheskiy inspektor Magadanskogo oblastnogo komiteta professional'nykh soyuzov (for Kutsenko). 2. Rukovoditel' obshchestvennogo sovta pri otdele okhrany truda zhurnala "Okhrana truda i sotsial'noye strakhovaniye" (for Duvankov).
(Employer's liability)
(Maternal and infant welfare—Law and legislation)

S/137/61/000/002/041/046
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 2, p. 16 # 21125

AUTHORS: Shevchenko, A.A., Alferova, N. S., Rudoy, V. S., Kutsenko, G. F., Nesterova, N. N., Konovalov, V. P.

TITLE: Properties and Structure of High-Manganese Austenite 45G17Yu3 (45G17Yu3) Steel

PERIODICAL: "Byul. nauchn. tekhn. inform. Ukr. n.-i. trubn. in-t". 1959, No. 8, pp. 17-26

TEXT: The authors investigated the ductile properti s of 45G17Yu3 steel composed of (in %): C 0.4 - 0.5; Mn 16 - 18; Al 3.5 Si ≤ 0.6. It was found that the 45G17Yu3 steel was characterized by a sharply pronounced microchemical heterogeneity. The temperature of the beginning fusion of metal grains of the blank was 1300 - 1350°C (depending on the method of manufacture). Optimum ductility of 45G17Yu3 steel for hot deformation conditions in diagonal rolling mills corresponds to a temperature of 1200°C. The metal of the investigated 45G17Yu3 steel melts shows highly heterogeneous properties. Ductile properties of the blanks from different plants, melts and of bars from the same ingot are highly

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S/137/61/000/002/041/046
A006/A001

Properties and Structure of High-Manganese Austenite 45 17 3 (45G17Yu3) Steel

different. High ductile properties of the metal produced by melt No. 92344 at the Izhorsk Plant ($\sigma_в$ 58.4 kg/cm^2, σ_s 27.6 kg/mm^2, δ 30.7%, ψ 35% a_c 18.5 kg/cm^2, H_B 162) prove the possibility of improving the properties of the pipe blank of 45G17Yu3 steel.

T. R.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

KUTSENKO, G.G.; KOLTUNOV, V.F.

Selecting basic varieties of apples for Krasnodar Territory.
Kons. i ov. prom. 13 no.11:30-31 N '58. (MIRA 11:11)

1. Sovkhoz "Agronom" Krasnodarskogo kraya.
(Krasnodar Territory--Apples--Varieties)

USSR / Cultivated Plants. Potatoes, Vegetables, Melons. M-2

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6277

Author : Kornygina, I. E.; Kutsenko, G. I.
Inst : L'vov Agricultural Institute
Title : Rational Utilization of Electric Light Energy in the Cultivation of Vegetables on Shielded Ground

Orig Pub : Sb. nauchn. rabot stud. L'vovsk. s.-kh. in-t, 1958, vyp 1, 83-90

Abstract : No abstract given

Card 1/1

DANILYUK, V.A.; ZHUKOV, V.N.; PANOV, G.I.; KUTSENKO, G.L.; LUGOVETS, V.A.; NEKHOROV, N.A.; PORTNYAGIN, A.I.; RECHKIN, L.A.; SEREGIN, V.P.; SIVTSOV, V.P.; KHOLODNOV, Yu.I.; MEL'NIKOV, V.V., kand.tekhn.nauk, red.; KOZULIN, B., red.; CHERNIKHOV, Ya., tekhn. red.

[Radio amateur's handbook]Spravochnik radioliubitelia. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1962. 838 p.
(MIRA 15:8)

(Radio--Handbooks, manuals, etc.)

IMIL', A.I., inzhener; KUTSENKO, G.N., inzhener.

Concreting by means of vibration cement injection. Transp.stroi. 6 no.4:12-14 Ap '56. (MLRA 9:8)
(Concrete construction)

KICHAYEV, V.A., inzh.; KUTSENKO, G.P., inzh.

Device for drilling bore holes for rod bolting. Shakht.stroi. 6 no.9:24-25 S '62. (MIRA 15:9)

1. Pechorskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Rock drills) (Mine timbering)

[illegible]

M[illegible] of seedlings [illegible] (Poa L.) species at the early stages of their [illegible]. [illegible] dokl. vys. shkoly; [illegible] (MIRA 18:8)

1. [illegible] gosudarstvennogo universiteta [illegible].

BERLYAND, S.S.; PLESHKOV, L.Ye.; STOLYAROV, A.I.; YUREVICH, G.S.; ROZANOV, N.G.; KUTSENKO, L.S., redaktor; BEKKER, O.G., tekhnicheskiy redaktor

[Railroad transportation in metallurgy; a handbook] Zheleznodorozhnyy transport v metallurgii; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1951. 592 p. [Microfilm] (MLRA 10:1)

(Railroads, Industrial)

KOROBOCHKIN, I.Yu.; KIKVALIDZE, N.S.; GLADKIKH, D.V.; YESAULOV, A.T.; ROMANYUK, I.Ye.; KUTSENKO, I.S.

Accelerating the heating of stainless steel ingots before piercing. Biul.TSIICHM no.4:40-42 '61. (MIRA 14:10)

1. Nikopol'skiy Yuzhnotrubnyy zavod.
(Rolling (Metalwork)) (Steel, Stainless)

IVANOVA, R.M.; ASHRAFI, R.I.; BURIKOVA, Ye.M.; VITTENBERG, Z.V.; ZARETSKAYA, A.R.; NAZAR'YEVA, M.S.; RAFIYENKO, D.V.; BURAKOVA, G.Ye.; KUTSENKO, I.T.; KAS'YANOVA, Ye.M.; PERSHIN, S.P., inzh.

Observations on the stability of track. Put' i put.khoz. no.10:6-7 O '59. (MIRA 13:2)

1. Studenty Moskovskogo instituta inzhenerov zheleznodorozhnogo transporta (for all except Pershin).
(Railroads--Track)

KUTSENKO, I.Ye.

Work of pharmacies in the Lithuanian S.S.R. Apt. delo 12 no.6:47-48 N-D '63. (MIRA 17:2)

KUTSENKO, K., kandidat tekhnicheskikh nauk.

Pressure of loose mixtures on the walls of vessels. Muk.-elev. prom. 20 no.1:11-12 Ja '54. (MLRA 7:7)

1. Odesskiy tekhnologicheskiy institut im. I.V.Stalina.
(Grain--Storage)